IT- 601 –COMPUTER NETWORK

UNIT–I

Introduction to computer networks and Internet, overview Advantages - network, Types-server based, peer, hybrid, Server types, Network Topology-Bus, Star, Ring, Star bus, Star ring, Mesh, Network Protocols-Hardware Protocols, software Protocols, Selecting and design the network for an organization.

UNIT-II

Signal Transmission:- Digital signaling, Analog Signaling, Bit synchronization, Baseband and Broadband transmission, Network Media types- properties & specialties, Network adapters – working principals, configuration and selection.

UNIT-III

Network Layer: Network Layer Design issues, store and forward packet switching connection less and connection oriented networks-routing algorithm's-optimality principle, shortest path, flooding, Distance Vector Routing, Control to Infinity Problem, Hierarchical Routing, Congestion control algorithms, admission control.

UNIT-IV

Internetworking: -Tunneling, Internetwork Routing, Packet fragmentation, IPv4, IPv6 Protocol, IP addresses, CIDR, IMCP, ARP, RARP, DHCP.

Transport Layer: - Services provided to the upper layers elements of transport protocol-addressing connection establishment, connection release, Crash Recovery.

UNIT-V

UDP, RPC, Real Time Transport Protocols, The Internet Transport Protocols- Introduction to TCP, The TCP Service Model, The TCP Segment Header, The Connection Establishment, The TCP Connection Release, The TCP Connection Management Modeling, The TCP Sliding Window, The TCP Congestion Control, The future of TCP.
Application Layer:- Introduction, providing services, Applications layer paradigms, Client server model, Standard client-server application-HTTP, FTP, electronic mail, TELNET, DNS, SSH.

REFERENCES:

- Andrew & Tanenbaum, "Computer Network "
- Prakash C Gupta, "Data Communication
- William Stallings, "Data and Computer Communication"
- Computer Networking and the Internet (5th edition),Fred Halsall, Addison Wesley
- TCP/IP Protocol Suite (3rd edition), Behrouz Forouzan, McGraw Hill

IT- 602 –DISTRIBUTED SYSTEM

UNIT-I

Introduction to Distributed Systems: Introduction, Examples of distributed Systems, Architecture for Distributed System, Goals of Distributed system, Hardware and Software concepts, Distributed Computing Model, Advantages & Disadvantage distributed system, Issues in designing Distributed System.

UNIT-II

Distributed Share Memory And Distributed File System: Basic Concept of Distributed Share Memory (DSM), DSM Architecture & its Types, Structure of Share Memory Space, Consistency model , Desirable features of good Distributed File System , File Model, File Service Architecture, File Accessing Model, File Sharing Semantics, File Catching Scheme, File application

UNIT-III

Distributed Objects and Remote Invocation: - Communication between distributed objects, Remote procedure call, Events and notifications, Java RMI case study.
Security: - Overview of security techniques, Distributed File Systems, File service architecture, Sun Network File System, The Andrew File System.

UNIT-IV

Distributed Multimedia & Database System: - Distributed Data Base Management System (DDBMS), Types of Distributed Database.
Distributed Multimedia: - Characteristics of multimedia Data, Quality of Service Managements.

UNIT-V

Distributed Transactions: - Flat and nested distributed transactions, Atomic Commit protocols, Concurrency control in distributed transactions, Distributed deadlocks, Transaction recovery.
Replication: - System model and group communication, Fault-tolerant services, Transactions with replicated data.

REFERENCES:

- Sinha, Distributed Operating System Concept & Design, PHI
- Coulouris & Dollimore, Distributed System Concepts and Design, Pearson Pub
- Singhal & Shivratari, Advance Concept in Operating System, McGraw Hill
- Attiya & Welch, Distributed Computing, Wiley Pub.

IT- 603 –WEB TECHNOLOGY

UNIT-I

History of the internet, internetworking concepts, architecture, switch, router, protocols for internetworking, internet address and domains. Introduction World Wide Web (WWW), working of web browser and web server, N-tier architecture, services of web server, Common gateway interface (CGI), Uniform Resource Locator (URL), Hyper Text Transfer Protocol (HTTP), feature of HTTP protocol, HTTP request-response model, Hyper Text Transfer Protocol Secure (HTTPS).

UNIT-II

Introduction to Hyper Text Markup Language (HTML), HTML elements, XHTML syntax and Semantics, eXtensible Markup Language (XML), element, attributes, entity declarations, DTD files and basics of Cascading Style Sheet (CSS), Document object Model (DOM) history and levels, Document tree, DOM event handling.

UNIT-III

Introduction to Java Script, Basic concepts, variables and data types, functions, conditional statements, Loops, Operators, Arrays, Standard Objects and form processing in Java.

UNIT-IV

Evaluation of web applications, type of web documents, feature of web pages, multitier web applications, introduction to Apache web server. **Security in application: -** authentication, authorization, auditing, security issues, security on the web, proxy server, Firewall. Middleware Concepts, CORBA, Java Remote Method Invocation (RMI), EJB, Microsoft's Distributed Component Object Model(DCOM) Web server and its deployment, Web client, services of web server, mail server proxy server, multimedia server.

UNIT-V

Introduction to servlet, Overview Architecture Handling HTTP Request, Get and post request, redirecting request multi-tier applications. Introduction to JSP, basic JSP, Java Bean class and JSP. Setting up an Open Data Base Connectivity (ODBC) data source.

REFERENCES:-

1. Web Technologies- A computer science perspective By Jeffrey C. Jackson, Pearson Eduction .

2. Web Technologies-TCP/IP Architecture, and Java Programming By Achyut S. Godbole and Atul Kahate

3. An introduction to Web Design +Programming by Paul S. Wang Sanda, S Katila,CENGAGE Learning.

LIST OF EXPERIMENTS: -

1. Use of various HTML tag to web forms create HTML forms.

2. Use of java script functions on web forms.

3. Use of CSS on HTML forms and Dynamic HTML page.

4. Use of Data list and data grid controls.

5. Write a simple HTML code incorporating simple tags, list and div.

6. Student should be able to load a text editor, enter same HTML tags.

7. Student should know how to add images to web pages and change either   background or text colors using the available color schemes.

8. To display the Background in the sample, create fresh file named "My page 2. Html" Containing the following codes.

9. Write a program to create form and add fields as well as buttons.

10. The My page html code should new like this after the paragraphs are modified.

11. Write a program to create CSS and insert to their web documents either externally or internally.

12. Write a program to modify CSS files, Changing Fonts, Padding, Listing, Merging, Table, Borders.

IT- 604 –SOFTWARE ENGINEERING

UNIT–I

SOFTWARE: - Introduction, Characteristic, components & application, Software Engineering - A Layered Approach, Software Process Models: Linear Sequential Model, Prototype Model, Incremental Model & Spiral Model, Project Metrics: Metrics in the process & project domains, Software measurement - Size Oriented Matrices.

UNIT–II

Software project planning:- project planning objectives, Software scope, Resources - Human Resources, reusable software Resources, Environmental Resources Software, Project Estimation, Decomposition techniques, Empirical estimation models, Software Quality Assurance: Quality Concepts, Quality Movements, SAQ activities, Statistical Quality Assurance, Software reliability, SAQ Plan.

UNIT–III

Requirements Analysis :- Requirement Engineering Processes, Feasibility Study, Problem of Requirements, Software Requirement Analysis, Analysis Concepts and Principles, Analysis Process, Prototyping Methods and Tools , Specification Software Requirement Specification , Specification Review.

UNIT–IV

Logic Testing & Input Space Partitioning:- Logic Predicates and Clauses, Logic Expression Coverage Criteria, Structural Logic Coverage of Programs, Specification-Based Logic Coverage, Logic Coverage of Finite State Machines, Disjunctive Normal Form Criteria, Input Domain Modeling , Combination Strategies Criteria ,Constraints among Partitions.

UNIT–V

Testing Object-Oriented Software: - Unique Issues with Testing OO Software, Types of Object-Oriented Faults, Testing Web Applications and Web Services, Testing Static Hyper Text Web Sites, Testing Dynamic Web Applications, Testing Web Services, Testing Graphical User Interfaces, Testing GUIs, Real-Time Software and Embedded Software.

REFERENCES:

- Software Engineering- A Practitioner's Approach, Fourth Edition, By Roger S. Pressman, McGraw Hill.
- I. Sommerville, "Software Engineering", Eighth Edition, Pearson Education, 2007
- Software Engineering principle and practices- Deepak Jain Oxford University Press.
- Software Project Management, Kelkar, PHI Learning

LIST OF EXPERIMENTS:-

- ❖ Studying various phases of Waterfall Model.
- ❖ Using COCOMO model estimate effort for Banking or on line book store domain problem.
- ❖ Draw E-R diagram, DFD, CFD and STD for the project
- ❖ Design of the test cases.
- ❖ Prepare FTR. Version control and change control for software configuration items.
- ❖ Library Management System
- ❖ Employee management application
- ❖ Develop sequence diagram.
- ❖ Develop Class diagram.
- ❖ Develop DFD model (level-0, level- 1 DFD and Data dictionary) of the project.

IT- 605 – OBJECT ORIENTED PROGRAMMING WITH DOT NET

UNIT–I

Introducing VB.NET and the .NET Platform, Fundamentals of Design and Programming, Variables and Constants, Procedures and Functions, File I/O Arrays and Structures Events and More Controls, SQL connected mode, disconnected mode, dataset, data-reader Data base controls: Overview of data access data control, using grid view controls, using details view and frame view controls, ado .net data readers, SQL data source control, object data source control.

UNIT–II

OOPs Concept: - Class, Object, Component, Encapsulation, Inheritance and Types of Inheritance, Polymorphism & Object Creation and Instantiation, Programming Encapsulation, Understanding Encapsulation Concept through an example, Constructor & Inheritance , Type Casting of Reference Types, Abstract Class, OOPs, Interface & Polymorphism, Overview of Interface, Interface with examples.

UNIT–III

Introducing C#, Building C# Applications, Core C# Programming Constructs, Defining Encapsulated Class Types, Understanding Inheritance and Polymorphism, Understanding Structured Exception Handling, Understanding Object Lifetime, Advanced C# Programming Constructs, Working with Interfaces, Collections and Generics, Delegates, Events, and Lambdas, Indexers, Operators, and Pointers, Programming with WPF Controls.

UNIT–IV

Installing ASP.NET framework, overview of the ASP .net framework, overview of CLR, class library, overview of ASP.net control, understanding HTML controls, study of standard controls, validations controls, rich controls. Windows Forms:- All about windows form, MDI form, creating windows applications, adding controls to forms, handling Events, and using various Tolls.

UNIT–V

XML: - Introducing XML, Structure, and syntax of XML, document type definition (DTD), XML Schema, Document object model, Presenting and Handling XML, XML data source, using navigation controls, introduction of web parts, using java script, Web Services.

REFERENCES:
1. C# for Programmers by Harvey Deitel, Paul Deitel, Pearson Education
2. Balagurusamy; Programming in VB; TMH
3. Web Commerce Technology Handbook by Daniel Minoli, Emma Minoli , TMH
4. Web Programming by Chris Bates, Wiley
5. XML Bible by Elliotte Rusty Harold ,
6. ASP .Net Complete Reference by McDonald, TMH.
7. ADO .Net Complete Reference by Odey, TMH

LIST OF EXPERIMENTS:-

1. Working with call backs and delegates in C#

2. Code access security with C#.

3. Creating a COM+ component with C#.

4. Creating a Windows Service with C#

5. Interacting with a Windows Service with C#

6. Using Reflection in C#

7. Sending Mail and SMTP Mail and C#

8. Perform String Manipulation with the String Builder and String Classes and C#:

9. Using the System .Net Web Client to Retrieve or Upload Data with C#

10. Reading and Writing XML Documents with the XML Text-Reader/-Writer Class and C#

11. Working with Page and forms using ASP .Net.

12. Data Sources access through ADO.Net,

13. Working with Data readers, Transactions

14. Creating Web Application